

INSIGHT

CASE STUDY:

IKEA GREENWICH

**WALDECK HEAD
OFFICE RELOCATES
TO WELLINGORE HALL**

**UTILISING
DRONES TO
AVOID DISPUTES**



"We look forward to welcoming clients and colleagues to what can only be described as a beautiful setting."

Waldeck Head Office relocates to HISTORIC WELLINGORE HALL



Waldeck has relocated its Head Office to Wellingore Hall as part of a plan to enhance our multi-disciplinary engineering offering.

The Lincolnshire born business, which is part of the wider Morson Group, has offices throughout the country offering multi-disciplinary engineering across the following services:

- **Civil and Structural Engineering**
- **Architectural Design**
- **Mechanical and Electrical Engineering**
- **Commercial and Risk Management**
- **Digital and Technologies**

With over twenty staff based in the new office, Waldeck occupies part of the Grade 2 listed building's West Wing. Built in 1760, the refurbished first-floor space offers views across the impressive grounds as well as a grand reception, team offices, meeting rooms and collaborative hot-desk areas.

Sue Wright, Managing Director shares:

"Lincolnshire is really important to Waldeck and this is an exciting opportunity for us. Wellingore Hall is a fantastic new base for our Head Office which houses engineering project delivery teams and our specialist digital services as well as the businesses central Finance, HR and Marketing functions. We look forward to welcoming clients and colleagues to what can only be described as a beautiful setting.

"The new offices' proximity to our Newark and Peterborough offices will see our multi-disciplinary teams working closely to deliver work for clients across the East Midlands. We see the region as a core part of our strategy and this office is a commitment to the local area, our clients and employees."

Proprietor, Richard Overton, who bought the Hall in 1992 shared:

"We are thrilled to welcome Waldeck to Wellingore Hall. They are a fantastic addition to the variety of successful businesses within the premises. As an organisation that has evolved with the times and continues to expand their horizons, we hope Wellingore Hall can play part of their history, as they will with ours."



Waldeck named in Top 50 Most Innovative Midlands Businesses

A report ranking 50 of the Midlands' most innovative businesses has been published today by Midlands law firm Mills & Reeve as part of its biennial "Innovation 50" – a campaign that celebrates the region's R&D royalty, industry ground-breakers and rising stars.

The report, which names Waldeck as one of the top 50 businesses, highlights innovative success stories from across the region and features businesses across five categories: business intelligence and performance; communication; development and inclusivity; healthier, safer lives and place and environment.

A select group of business leaders from across the East and West Midlands were part of the expert panel that selected the final 50 from this year's applications. The panel judged entrants on both their originality and impact, with the 50 highest-scoring businesses securing their place in the report.

Steve Allen, Head of the Birmingham office at Mills & Reeve, said:

"We launched the Innovation 50 back in 2017 to celebrate Midlands businesses at their most enterprising, confident and creative. Two years on, and the buzz around the region has only grown – with the quality of 2019 entries showing that we more than live up to our national reputation. The 2019 Innovation 50 is leading the way with fresh ideas and standout execution. We're proud to launch the latest report and look forward to seeing the journeys that these businesses take in the coming years."

Sue Wright, Managing Director, commented: "Innovation is a core value of our business, and to be named one of Midlands' most innovative businesses is welcome recognition to the dedication of our team as the driving force to 'do things smarter'. As a business that has continued to invest in R&D and seek forward-thinking solutions for clients we look forward to where we can go from here."

To view the full 2019 Innovation 50, visit:

www.innovationfifty.com



Waldeck Sponsor Salford Business Awards

Waldeck are delighted to be announced as one of the sponsors at the Salford Business Awards.

The annual event is organised in partnership between the University of Salford, The Business Group and Salford City Council.

We will be attending the gala dinner and evening of celebration at the The Lowry Hotel on Thursday 31st October 2019.

Category winners of the Salford Business Awards will be announced on the night and the evening promises to entertain, reward and above all, recognise and celebrate those businesses and individuals who have contributed to making the city great.

This year's categories are:

- **Business of the Year Award**
- **Community Award**
- **Entrepreneur Award**
- **Excellence Award**
- **Innovation Award**
- **Best Use of Technology Award**
- **Best Employer Award**
- **Rising Star Award**
- **Inspiring Young People Award**

"to be considered for an award for the fourth year running is a telling reflection of our consistency..."

Waldeck shortlisted in CIBSE Yorkshire Awards for fourth year running

We are proud to share Waldeck has been shortlisted in the CIBSE Yorkshire Awards for the fourth consecutive year. This year, we are in the running for 'Consultancy of the Year' as well as 'Project of the Year' for our work on IKEA's flagship eco-store in Greenwich.

Andy Inkson, Director of Mechanical and Electrical Engineering shared:

"This shortlist is a great acknowledgement of the work we have been delivering for our clients over the past year and for Waldeck to be considered for an award for the fourth year running is a telling reflection of our consistency and commitment to our clients and the quality of our work.

"We look forward to joining clients and peers from the industry on what is always a fantastic evening to celebrate talent and excellence across Yorkshire at the awards dinner later this year."

The CIBSE Yorkshire Awards are the only awards dedicated to building services outside of London and are organised by volunteers from the industry to celebrate the achievements and people from within it.

The judging panel will include a number of industry experts and the winners of each category will be announced at the Royal Armouries New Dock Hall in Leeds on 15th November 2019.



Waldeck awarded a place on London & Quadrant Housing Trust Framework

Waldeck have been awarded a place on London and Quadrant Housing Trusts Civil and Structural Engineering (Counties) Frameworks.

The two Frameworks run from 2019 to 2021 and will support the delivery of a substantial proportion of London and Quadrant Housing Trusts (L&Qs) development programme to enable the delivery of new build, refurbishment, conversion, mixed use and mixed tenure schemes in both rural and urban environments.

L&Q is a leading residential developer and charitable housing association, which is currently one of the UK's most successful independent social businesses. L&Q houses around 250,000 people in more than 95,000 homes, primarily across London and the South East.

Waldeck Director, Graham Wright shared:

“We are delighted to have been awarded a place on L&Q's Framework for Civil and Structural Engineering, they are one of the country's largest housing associations, with ambitious plans to build 100,000 homes over the next ten years. We are extremely proud to be part of their journey and look forward to supporting them towards achieve their goals.”



UTILISING DRONES TO AVOID COSTLY & TIME-CONSUMING DISPUTES



The use of innovative technology, and in particular, drones are becoming more common on construction projects. We take a look at how utilising drones on construction projects can help avoid costly and time-consuming disputes later down the line.

1**Providing a different perspective of a project**

With a variety of types of drones and a multitude of sensors on the market, drones are becoming a valuable tool within the construction industry.

Not only do drones capture data, they can also provide new perspectives on projects. With the right combination and specification of drone and sensor(s), aerial data can be used throughout the project lifecycle, this opens up the opportunity to utilise drones to record, capture, monitor and analyse everything which occurs during the construction of a project.

2**Improving project reporting and dispute resolution**

With comprehensive coverage of a site and a variety of different outputs, drones make it easy to track and report construction progress. Images of construction progress can be overlaid and analysed to provide a direct comparison of construction progress, support tolerance and build checks as well as provide a non-subjective insight into the actual situation.

This form of monitoring and reporting construction progress, when undertaken at regular intervals also provides time stamped records which can be drawn upon should a dispute arise. In these instances drone data from specific dates and locations provides a verifiable visual record, rather than relying on site diaries, staff testimonies and email chains.

3**De-risking**

Drone data informs construction and can also be leveraged to highlight potential hazards and breaches of health and safety, ultimately assisting the prevention of accidents and near misses.

Should the worst happen, and an accident occur on site, drone data can be leveraged to provide insights into the how and why, establishing what happened and how it can be prevented from happening in the future.

In Summary

Construction projects by their very nature are extremely complex, not only in terms of build aspects, but also the many relationships and interdependencies which they bring to a project through from procurement, logistics and contractual requirements.

Whilst traditional forms of reporting have been utilised for years, history shows us the many shortfalls which are highlighted in this when a dispute arises. It's for this very reason that having non-subjective time stamped data which provides visual insights and measurable information can quickly bring conclusive closure to a dispute.

The focus of this article has been primarily on disputes and dispute resolution, however it is important to highlight that regular monitoring and measurement of a project using a drone can also mitigate the chance of a dispute occurring.

The instant and invaluable insights drones provide enable the project stakeholders to rapidly identify emerging and potential issues and put in place preventative measures. The use of drones in this manner therefore brings the additional benefit of dispute mitigation.



Data has a better idea

How is a boom in available data impacting the construction industry?

Further to The Economist's claim that the world's most valuable resource is no longer oil, but data, we dig deeper into how a boom of available data is impacting the construction industry.

Mark Greatrix, Director of Digital and Technologies, explains: Taking a step back several years, the construction industry was a late adopter of new and emerging digital technologies which posed the potential for a data driven revolution. During this time, industries such as the manufacturing industry very much stole the march. Through their drive to improve and optimise, businesses within this industry have evolved into data-centric organisations which produce and consume data at an ever-growing rate.

Moving a few years forward, and after taking heavy criticism for the monolithic approach to progress, the construction industry looked at shining examples of other industries, such as manufacturing, to plot a course for betterment.

In May 2011 and through the construction industry strategy, the UK Government challenged the industry to start using collaborative Building Information Modelling (BIM) on all publicly funded construction projects by March 2016. Minister for the Cabinet Office, Francis Maude, went on to outline how the sectors adoption of BIM would put the UK at the vanguard of a new digital construction era. This move created a 'spark' and was the catalyst the construction industry very much needed. Whilst the journey is far from over, a huge step-change in the way the industry produces and harnesses data has since occurred.

Looking at current-day activities, it is clear that within the construction industry, the focus has shifted onto the life-cycle use of data and how it can be of benefit for a construction project from inception, to design,

construction, handover and operation. Data is now a prime consideration, with each project stakeholder looking to capitalise on project data to reap benefits and efficiencies for their activities.

Similar to online tech data titans such as Google, Facebook, Amazon, Apple and Microsoft, this thirst for data has seen a boom in the use of technologies which both produce and leverage data. Working with our clients from project concept phases, we see first-hand how their focus on data and its value to them for post-construction handover and operation has grown, giving clients the ability to harness data rich Building Information Models of their assets.

At Waldeck, our designs are now informed by rich 3D reality capture data sets, giving us measurable and contextual information of an environment. 3D modelling and analysis has become intrinsically linked with users leveraging manufacturers component data alongside the plethora of geographic data sources to optimise designs, build sequences, logistics, and choice of building fabric.

This 'spark' has certainly changed the way the construction industry now thinks, and we are already seeing how a boom in data has spurred the progression towards generative design and the adoption of advanced tech such as machine learning and artificial intelligence.

Looking into the future, trying to predict how far data will allow the construction industry to evolve is becoming limitless. 'Smart Construction' is a huge part of the Government's 2025 vision, and with advances in wireless technologies which will draw benefit from a 5G network, it is clear to see how the boom in data will become even more abundant.

THE NATIONAL DIGITAL TWIN

Director of Digital and Technologies, Mark Greatrix was recently joined by experts from across the industry as he spoke as part of the panel at 'National Digital Twin Day' in London.

The Centre for Digital Built Britain (CDBB) partnered with the Institution of Civil Engineers (ICE) to make the day possible, bringing together organisations and individuals with an interest in the opportunities provided by Digital Twins, helping delegates to make useful connections and advance their Digital Twin knowledge and adoption.

Mark was joined on the panel by other early adopters as they discussed alleviating the risks and pain points that you may expect when delivering a Digital Twin in your organisation.

The session, which was facilitated by PCU3ED, discussed how Digital Twin thinking can drive more value from data, maximise infrastructure performance and deliver better outcomes for society.

Mark shares his insights from the day: Whilst there was a huge amount of debate in the main sessions of the day, the focussed group session highlighted three common themes.

Culture

There was a genuine concern within the group about acquiring the knowledge and skillsets which will be crucial to both create and harness Digital Twins. Although culture is often seen as the softer side of the picture, it was clear how hugely important it is in ensuring business readiness and successful adoption.

Understanding of Digital Twins

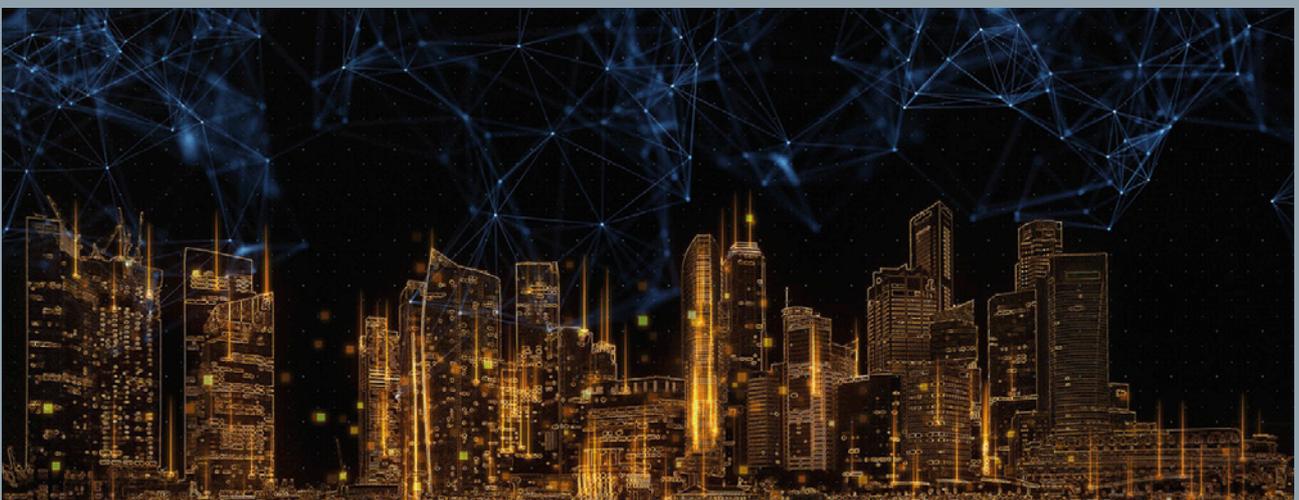
It became apparent throughout the day that everyone had a differing opinion of what a Digital Twin is, this also resonated through the main sessions. Whilst in the future Digital Twins may take various forms, it is clear that to capitalise on the ambition of connected Digital Twins, a common and open language will be fundamental to the success.

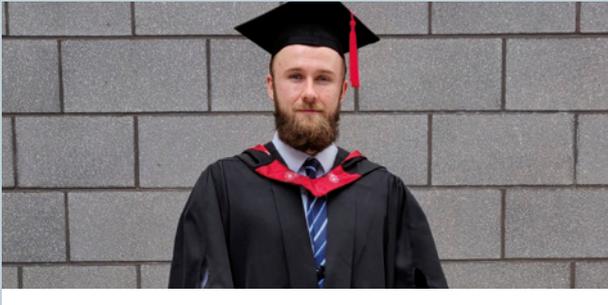
Requirements

Different organisations have different needs, and in turn, different uses for a Digital Twin. It is crucial to understand and outline those requirements before embarking on a Digital Twin programme to ensure maximum return on investment.

Find out more

To understand how your business could benefit from Digital Twin thinking, please call Mark on 08450 990285.





Matthew Barnett graduates from Building Services Engineering and Sustainable Engineering Degree

A huge congratulations to Electrical Engineer Matthew Barnett, who has graduated from his BEng (Hons) in Building Services Engineering and Sustainable Engineering at the University of Central Lancashire with a 2:1.

Matthew has studied for his degree whilst working full-time in Waldeck's Sheffield office, working on a wide range of projects across the education, healthcare, manufacturing, multi-residential, custodial, rail and retail sectors.

Matt shares a short synopsis of his dissertation: "My dissertation was on the accuracy of lighting maintenance factors within lighting design. I chose this topic as while working in the industry, I found there is often a lot of ambiguity in the answers and factors provided when trying to measure this factor. I was looking to see why people chose the factors they did, whether this impacts the lighting design choices and if this could lead to potential energy wastage through over-illumination.

"For my evidence collecting, I asked people in the industry what they thought of the lighting maintenance factors and what their experiences were with them. I also took measurements of two different office types, one using old fluorescent lighting and one using LED lighting. From this information, I compared it to the lighting design criteria that was used at the design stage to see whether the lighting maintenance factors they suggested were accurate to what was finally installed."

Andy Inkson, Director of Waldeck's Mechanical and Electrical Engineering commented:

"We see a huge importance in offering continued learning and education at Waldeck and it's always rewarding to see the results and benefits achieved by each student. In this case Matthew has been rewarded for his hard work on the degree course whilst also successfully delivering his workload as part of our Mechanical and Electrical Building Services team. Well done Matthew!"

George Naylor takes on Yorkshire Three Peaks for Macmillan

A huge congratulations to Sheffield-based Assistant Electrical Engineer, George Naylor who recently conquered the Yorkshire Three Peaks, walking 25.5 miles in 12 hours.

George, alongside his Dad and his Dad's work colleagues at Threepwood Consulting, completed the challenge in memory of Threepwood's Founder and former Managing Director, Colin.

So far, the group have doubled their target and raised a fantastic £1000 for Macmillan Cancer Support. George shares:

"Taking part in the Yorkshire Three Peaks Challenge was a perfect opportunity for me to help raise money for Macmillan Cancer Support, they are a fantastic organisation who I know helped Colin and those close to him through the toughest of times, as they do for many who have been affected by Cancer.

"During their lifetime, almost everyone is affected by Cancer whether it is themselves, family, friends or colleagues, and this challenge was a chance for me to do my bit in helping raise money for such an important cause.

"I took part in the walk alongside my Dad and his work team who were affected when their Managing Director was diagnosed with, and later passed away due to Cancer. We can't believe we have already doubled our fundraising target of £500, which we are so grateful for!"



As part of Waldeck's on-going CSR commitments, all of our employees are granted one day of annual leave each year to support a local charity or cause.

Our Bristol team used their day to step away from their desks and onto the streets of Bristol to support a project called My Wild City. The project, which was launched by independent charity, Avon Wildlife Trust aims to restore important wildlife habitats within Bristol.

Avon Wildlife Trust works with local communities to conserve crucial wildlife-rich spaces including wildflower grasslands, native woodland, wetland and reedbed habitats – helping to create a more resilient ecosystem whilst also improving people's health and wellbeing through connection to nature.

Ed, Will, Andy and Martin joined the practical conservation group 'Wild City Action Team' to help look after wildlife sites close to our Bristol office, and got stuck

into hay cutting at a local site called Northern Slopes.

Ed Wells, Senior Engineering BIM Technician, shared: "Working with a team of volunteers, we helped clear out two sections of meadow which allows for a greater diversity of native wildflowers to flourish in the Spring.

"Although a bit wet in the morning, the weather cleared up by lunch time and it was a great day for us all. We encountered some wildlife up-close including a smooth newt, kestrel and some shrews. We also learnt how to use a scythe and about the importance of clearing the land in terms of conservation. We were grateful to be able to join the group and make a contribution to the landscape of our home city."

To find out more about how you can help your local wildlife, please visit The Wildlife Trusts main website: www.wildlifetrusts.org



BRISTOL TEAM SUPPORT LOCAL 'MY WILD CITY' PROJECT

"We were grateful to be able to join the group and make a contribution to the landscape of our home city."

Case Study

IKEA GREENWICH

Overview

Waldeck were commissioned by home furnishings giant, IKEA to go big with green credentials at their new eco-leading flagship store in Greenwich.

IKEA Greenwich was designed and built with sustainability at its core, reflecting IKEA's people and planet positive ambition.

The project utilised the following technologies and environmental features in the design and construction:

SOLAR PV

A 850 kWp solar array supplements the store's energy requirements and reduces the energy dependence from the grid.

WATER EFFICIENCY

Two rainwater harvesting tanks alongside low water use fittings reduce the store's water consumption by up to 50%.

EVAPORATIVE COOLING UNITS

Evaporative cooling helps reduce energy demand from the stores air conditioning system.

GROUND SOURCE HEATING

Ground source heat pumps provide the store with 88% of the annual heating and cooling demand.

BIODIVERSE GREEN ROOF

A green roof consisting of various substrate and habitat areas provides fantastic new and varied habitat for local wildlife.

SUSTAINABLE TRANSPORT

Various public transport links, cyclist facilities and provision for EV vehicles give IKEA staff and store visitors sustainable transport options when travelling to the store.

FSC CERTIFIED TIMBER

The store incorporated 100% FSC in the timber constituents of the build.

Our Solution

Waldeck provided digitally focussed Mechanical and Electrical (M&E) building services design consultancy for the new eco-leading flagship store.

Delivering best value for our clients, our team utilised our Building Information Modelling (BIM) expertise to deliver a future-proofed solution by 'starting with the end in mind' through a deep understanding of IKEA's long-term operational requirements for their assets.

Results

Overall, IKEA Greenwich scored exceedingly well within all areas of BREEAM (90.4%), with significantly good scores achieved in areas such as Low and Zero Carbon Technologies, Water Consumption and NOx Emissions.

Targeting BREEAM 'Outstanding', the following achievements were successfully reached:

- **During construction of IKEA Greenwich, the construction scored 42/50 demonstrating 'beyond compliance' in the Considerate Contractors Scheme assessment of the site's considerate construction attributes.**
- **The biodiverse roof achieved compliance with the Green Roof Code, enhanced ecological features on-site, and has featured as an exemplary case study in the new London Green Roof Report.**
- **The building achieved an innovation credit for the inclusion of evaporative cooling with rainwater harvesting from the roof.**





Case Study

Department for Education & The Elliott Group

Project Overview

Waldeck were appointed by the Elliott Group as Mechanical and Electrical (M&E) Engineering Consultant on five new build primary schools secured in the DfE PSBP2 Framework. Four of these have now been handed over, the fifth with a target completion date of June 2020.

Our Solution

For all schools, Waldeck were appointed to provide:

M&E PRE-CONTRACT SERVICES

This included determining the initial building M&E services loadings and liaising with utilities companies for quotations and advice on upgrade works to suit the new development.

M&E PERFORMANCE DESIGN

Our team then carried out initial modelling of the predicted daylight and overheating, based on measured weather data, and advised of various options to maximise daylight, whilst ensuring compliance with the CIBSE TM52 overheating assessment.

An M&E performance design was prepared for inclusion with Elliott's final Contractor's Proposals, and against which sign off was received by the DfE.

REVIEW OF DETAILED DESIGN

Detailed design was then developed by the M&E Contractor and during this stage, Waldeck acted as Technical Assessors to ensure, as the design developed, that the principles of the performance design were adhered to and compliance with the DfE's brief maintained.

CONSTRUCTION STAGE TECHNICAL SUPPORT

During the construction stage, our team provided off-site support for queries and carried out regular site visits to review for compliance.



NEWTON ST CYRES PRIMARY SCHOOL Devon

A full turnkey solution for a new build single storey half form entry primary school (GIFA 853m2) was provided, including vehicle drop-off, car parking and delivery entrance and road, external works, landscaping, MUGA pitch and pedestrian pathways.

Our Solution

In addition to our core services, for this particular school, we also proposed sun pipes to achieve daylight compliance. The sun pipes were chosen following discussions with both Elliott's and the Architect, PTAL, to ensure that the daylight solution did not compromise the overheating assessment, the architectural intent and was within budget.

Daylight sensors were specified within all teaching and learning spaces, to ensure suitable daylight dimming by lighting row.

Start Date

31 August 2017

Completion Date

25 May 2019

Project Value

£3.49m



**NEWTON POPPLEFORD
PRIMARY SCHOOL**
Devon

A full turnkey solution for a new double storey 1FE primary school building was provided, including accessible car parking and delivery and maintenance entrance, external works, landscaping, pedestrian pathways and access bridges along with demolition works of the existing school buildings.

Our Solution

The new 1FE primary school was built on an existing school site in Devon, to replace five of the six existing school buildings. The existing Library building was re-supplied electrically, from the new school building. Connections were provided to link the data and alarm systems to the new school building.

At this particular school, after draft CPs, the architectural layout changed which comprised the daylight strategy. Liaison with both Elliott UK and the Architect, PTAL, were required to allow suitable feasible amendments to achieve the daylight requirements.

Start Date
27 July 2017
Completion Date
25 January 2019
Project Value
£3.39m

MAYFIELD SCHOOL
London Borough of Ealing

This scheme included the relocation of the reception classroom modular building and decant of the existing pupils into temporary accommodation, which was followed by construction of a new 3-storey 2214m2 building. The school was awarded a BREEAM 'Very Good' rating.

Our Solution

The new 2FE primary school was built on an existing school site in London. For this particular school, the main issue to overcome was compliance with the TM52 overheating requirements, due to the London location. The overheating assessment was carried out in a co-ordinated manner with the daylight assessment and compliance being achieved using carefully selected glazing. This ensured that the solar heat gains and potential glare was limited whilst maintaining good daylight conditions in the classroom.

The existing school site had a separate Nursery building which was retained and the electrical services were interfaced to the new school building.

Start Date
31 July 2017
Completion Date
17 May 2019
Project Value
£8m



**MINERVA PRIMARY
ACADEMY**
Bristol

The project consisted of the provision of temporary decant accommodation from the outset of the scheme due to site area restrictions. Following occupation of the temporary accommodation, demolition of the existing buildings took place. The new two-storey 2,196m2 building included an allowance of 124m2 for nursery provision for 30 children. Final activities included transferring teaching provision from the temporary accommodation into new facilities, and their final removal and completion of external works.

Our Solution

In addition to our core services, for this particular school, we designed a photovoltaics system as part of the M&E solution for the school, to achieve compliance with local planning requirements. The PV system was designed to secure at least a 20% saving in CO2 emissions from energy use through on-site generation of renewable energy.

Start Date
21 December 2016
Completion Date
1 November 2018
Project Value
£7.5m

Morson Projects



Morson Projects Power, Automation & Control Engineering (PACE) Capability



In the UK, demand for electricity is growing and thus placing increasing demand on existing transmission, distribution systems and renewable energy. National and regional electricity companies and major industrial consumers are embarking on major refurbishment projects to replace aged primary plant, protection and control systems.

Morson Projects covers all aspects of electrical engineering from transmission and distribution switchgear to the engineering design of full protection refurbishments and modifications. Ensuring full compliance with the customer's site safety rules, CDM rules, UK legislation and of course, our Health, Safety and Environmental policies. Our PACE department is currently made up of around 70 people.

Morson Projects takes pride in always seeking to work in partnership alongside its customers with common goals for efficiency, innovation and technical expertise. This provides Morson Projects with knowledge of the needs and aims of clients, so that planned and beneficial changes and improvements can be made to our service. This is essential in securing and maintaining the excellent long-term relationships Morson Projects has with our customers, 58% of which span over 20 years.

The main services Morson Projects provides within the power, automation and control industry are:

- **Control, Electrical and Instrumental**
- **Data Communications Networking and CCTV Systems**
- **Industrial Cyber Security**
- **Installation and Commissioning**
- **Panel Build**
- **Plant Design**
- **Primary and Secondary Engineering**
- **Process Engineering**
- **Project and Programme Management**
- **SCADA PLC Control Systems**
- **Software Development**
- **Systems Engineering and Integration**

Morson Projects

AVIATION

CAPABILITY



Morson Projects offers a complete design, development and manufacturing service to the world's leading military and commercial aerospace organisations.

From lightweight composite structures to complete systems integration, Morson Projects' engineering teams work independently, or in partnership with our client's existing project delivery teams, to provide comprehensive support throughout the industrial lifecycle.

OUR SOLUTIONS:

An A-Z of our combined services includes:

- **CNC Programming**
- **Data Translations**
- **EASA Part 21-J Design Services**
- **Electrical and Avionic Design**
- **Lifting and Handling Equipment**
- **Manufacturing Engineering**
- **Project and Programme Management**
- **Software Development**
- **Structural Design and Analysis**
- **Systems Engineering and Integration**
- **Through Life Support**
- **Tooling, Design and Manufacture**
- **Virtual Engineering**

OUR EXPERIENCE:

Our teams have worked on various aerospace programmes, including:

- **A320**
- **A350**
- **A380**
- **A400M**
- **CS100 and CS300**
- **C-Series**
- **Joint Strike Fighter (JSF) F-35 Lightning II**
- **Learjet 85**
- **Mitsubishi Aircraft Corporation**
 - **MRJ 200 Aircraft**
- **New Advanced Hawk**

INCLUDING PROJECTS SUCH AS:

- **CFD Modelling**
- **Composite Wing Development**
- **Defence Information Software**
- **EASA STC Certified Design Solution**
- **Information Environment Systems**
- **Landing Gear Extension Retraction System**
- **Materials Allowables Development**
- **Multi-Functional Fuel Cell System**
- **Reliability Centered Maintenance (RCM) Review**
- **Structural Design and Analysis**



Find out more

To understand more about Morson Projects aviation capability, please contact Andy Hassall on 07958 320 433.

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